

AMENDMENTS IN THE SPECIFICATION

Please amend the following paragraphs as indicated. Paragraph numbers are based on U.S. Publication No. 2004/0193650, dated September 30, 2004.

Please amend paragraph [0013] per the following amended paragraph.

The image-processing history storing unit may store details of an operation related to a frequency that was performed for the medical image in order to diagnose ~~a disease/injury~~an at least one of a disease and injury of the patient, as the details of image processing.

Please amend paragraph [0014] per the following amended paragraph.

The image-processing history storing unit may store a range of an intensity of brightness of the medical image that was selected for diagnosis of ~~a disease/injury~~an at least one of a disease and injury of the patient, as the details of image processing.

Please amend paragraph [0015] per the following amended paragraph.

According to the second aspect of the present invention, an image processing apparatus comprises: an image-processing history storing unit operable to store details of image processing performed for a medical image of a patient in such a manner that the details of image processing correspond to a name of ~~a~~an at least one of a disease and injury~~disease/injury~~ of the patient that was diagnosed; an image acquisition unit operable to newly obtain a name of ~~a~~an at least one of a disease and injury~~disease/injury~~ and a medical image; an image-processing details extraction unit operable to extract the details of image processing stored in the image-processing history storing unit in such a manner that the details of image processing correspond to the name of the at least one of a disease and injury~~disease/injury~~ newly obtained by the image acquisition unit;

and an image processing unit operable to perform image processing having details that are the same as extracted the details of image processing, for the medical image newly obtained by the image acquisition unit.

Please amend paragraph [0016] per the following amended paragraph.

The image-processing history storing unit may stores the details of image processing in such a manner that the details of image processing correspond to the name of the at least one of a disease and injury~~disease/injury~~ as well as a name of a site, the image acquisition unit further may obtain a name of a site to correspond to the medical image newly obtained, and the image-processing details extraction unit may extract the details of image processing stored in the image-processing history storing unit, to correspond to the name of the at least one of a disease and injury~~disease/injury~~ and the name of the site that were newly obtained by the image acquisition unit.

Please amend paragraph [0017] per the following amended paragraph.

The image-processing history storing unit may store the details of image processing in such a manner that the details of image processing correspond to the name of the at least one of a disease and injury~~disease/injury~~ as well as a type of the patient, the image acquisition unit may further obtain a type of a patient to correspond to the medical image newly obtained, and the image-processing details extraction unit may extract the details of image processing stored in the image-processing history storing unit, to correspond to the name of the at least one of a disease and injury~~disease/injury~~ and the type of the patient that were newly obtained by the image acquisition unit.

Please amend paragraph [0018] per the following amended paragraph.

The image-processing history storing unit may store the details of image processing in such a manner that the details of image processing correspond to the name of the at least one of a disease and injury~~disease/injury~~ as well as a name of a doctor who performed the image processing, the image acquisition unit may further obtain a name of a doctor to correspond to the medical image newly obtained, and the image-processing details extraction unit may extract the details of image processing stored in the image-processing history storing unit, to correspond to the name of the at least one of a disease and injury~~disease/injury~~ and the name of the doctor that were newly obtained by the image acquisition unit.

Please amend paragraph [0019] per the following amended paragraph.

The image-processing details extraction unit may extract one way of image processing for which a number of used times is the largest, from a plurality of ways of image processing stored in the image-processing history storing unit to correspond to the name of the at least one of a disease and injury~~disease/injury~~ newly obtained by the image acquisition unit.

Please amend paragraph [0021] per the following amended paragraph.

When an electronic medical chart was selected, the image acquisition unit may obtain the medical image and the name of the at least one of a disease and injury~~disease/injury~~ that are attached to the selected electronic medical chart, the image-processing details extraction unit may extract the details of image processing that are stored to correspond to the name of the at least one of a disease and injury~~disease/injury~~ newly obtained by the image acquisition unit from

the electronic medical chart, from the image-processing history storing unit, and the image processing unit may perform image processing having details that are the same as those extracted, for the medical image newly obtained by the image acquisition unit from the electronic medical chart.

Please amend paragraph [0034] per the following amended paragraph.

The electronic medical chart database 104 stores a medical image obtained by various types of imaging modality, such as CT, MRI, CR, US, as digital data. The image processing apparatus 100 or 102 is placed in a doctor's office, a consultation room, a medical examination room or the like and displays diagnosis information of a patient from the electronic medical chart database 104 in accordance with an instruction from a doctor. The doctor then examines a medical image displayed on the image processing apparatus 100 or 102 while performing image processing for the medical image, thereby conducting diagnosis of a-an at least one of a disease and injury~~disease/injury~~ of the patient.

Please amend paragraph [0044] per the following amended paragraph.

According to the image processing apparatus 100 of the present embodiment, in a case where medical images of an affected site of the same patient are taken on different dates and the doctor determines the progress of the disease or the degree of healing of the at least one of a disease and injury~~disease/injury~~ with the passage of time, the image processing apparatus 100 automatically performs image processing for the medical image to be examined in the same way as that of image processing performed for the previous medical image of that affected site of that patient. Therefore, the effort of performing image processing in the same way every time a

medical image is newly taken can be saved, and image processing can be automatically performed for the medical image to be examined in an appropriate manner. Moreover, image processing can be performed in the same way for a plurality of medical images that were taken on different dates. Therefore, it is possible to appropriately compare the medical images, thus correctly determining the degree of healing or the like.

Please amend paragraph [0048] per the following amended paragraph.

The electronic medical chart database 304 stores a medical image obtained by various types of imaging modality, such as CT, MRI, CR, US, as digital data. The image processing apparatus 300 or 302 is placed in a doctor's office, a consultation room, a medical examination room or the like and displays diagnosis information of a patient from the electronic medical chart database 304 in accordance with an instruction from a doctor. The doctor then examines a medical image displayed on the image processing apparatus 300 or 302 while performing image processing for the medical image, thereby conducting diagnosis of a-an at least one of a disease and injury~~disease/injury~~ of the patient.

Please amend paragraph [0052] per the following amended paragraph.

FIG. 7 shows an exemplary data structure of the image-processing history storing unit 306 in the present embodiment. The image-processing history storing unit 306 stores details of image processing that was performed for a medical image of an affected site of a patient in such a manner that the details of image processing correspond to the name of the at least one of a disease and injury~~disease/injury~~ that was diagnosed for that patient and the name of the affected site. The image-processing history storing unit 306 also stores the number of the used times of

the details of image processing in such a manner that the number corresponds to the details of image processing. Moreover, the image-processing history storing unit 306 may store the details of image processing performed for the medical image so as to correspond to the name of the doctor who performed the image processing having those details for that medical image. In addition, the image-processing history storing unit 306 may store the details of image processing performed for the medical image so as to correspond to the type of the patient of that medical image. The type of the patient is weight, age, or sex, for example. The image-processing history storing unit 306 may store details of image processing for each weight or weight range, each age or age range, or each sex.

Please amend paragraph [0053] per the following amended paragraph.

By storing the details of image processing not only for each of at least one of a disease and injury~~disease/injury~~ and each affected site but also for each weight or weight range, each age or age range, or each sex, image processing can be performed for medical images of various patients more appropriately. Moreover, by storing the details of image processing for every doctor, image processing can be performed in accordance with the preference of the doctor.

Please amend paragraph [0055] per the following amended paragraph.

FIG. 8 is a flowchart of an exemplary operation of the image processing apparatus 300 according to the present embodiment. The image acquisition unit 308 obtains a medical image and information attached to that medical image such as the name of the at least one of a disease and injury~~disease/injury~~, the name of the site, the name of the doctor, the type of the patient, from the electronic medical chart database 304 in such a manner that the medical image and the

attached information correspond to each other (Step S400). For example, when an electronic medical chart is selected in the image processing apparatus 300, the image acquisition unit 308 obtains the medical image and the attached information that are attached to the electronic medical chart thus selected in such a manner that the medical image and the attached information correspond to each other.

Please amend paragraph [0056] per the following amended paragraph.

The image-processing details extraction unit 310 searches for details of image processing in the image-processing history storing unit 306 based on at least one of the name of the at least one of a disease and injury~~disease/injury~~, the name of the site, the name of the doctor and the type of the patient that were obtained by the image acquisition unit 308 from the electronic medical chart (Step S402). In this search, the image-processing details extraction unit 310 may search for the details of image processing based on the name of the at least one of a disease and injury~~disease/injury~~ only or based on the name of the at least one of a disease and injury~~disease/injury~~ and the name of the doctor only, in accordance with the instruction input by the doctor, for example.

Please amend paragraph [0057] per the following amended paragraph.

In a case where desired details of image processing were not found in the search by the image-processing details extraction unit 310 (Step S404-N), the display unit 314 displays the medical image obtained by the image acquisition unit 308 (Step S414). The doctor then performs image processing for the medical image manually by means of the input unit 316 while observing the medical image displayed by the display unit 314 (Step S416). The doctor then

examines the medical image displayed by the display unit 314 so as to conduct diagnosis, and thereafter inputs the diagnosis in medical chart information by using the input unit 316 (Step S418). Then, the image-processing history storing unit 306 stores the details of the image processing that was performed for the medical image at the time at which the doctor inputted the diagnosis based on that medical image, together with the name of the at least one of a disease and injury~~disease/injury~~, the name of the site, the name of the doctor and the type of the patient (Step S420).

Please amend paragraph [0058] per the following amended paragraph.

In a case where desired details of image processing were not found in the search by the image-processing details extraction unit 310 (Step S404-N), the display unit 314 may present a display for allowing the doctor to select details of image processing stored in the image-processing history storing unit 306. The doctor may select the details of image processing by referring to the name of the at least one of a disease and injury~~disease/injury~~, the name of the site, the name of the doctor and the type of the patient. Then, the image processing unit 312 may perform image processing based on the details of image processing thus selected. In this case, the image-processing history storing unit 306 counts the number of the used times corresponding to the selected details of the image processing.

Please amend paragraph [0059] per the following amended paragraph.

In a case where the search by the image-processing history storing unit 310 finds a plurality of ways of image processing (Steps S404-Y and S405-Y), for example, in a case where a plurality of ways of image processing respectively corresponding to a plurality of names of

doctors were found in the search based on the name of the at least one of a disease and injurydisease/injury and the name of the site only, the image-processing details extraction unit 310 selects one way of image processing for which the number of the used times is the largest from a plurality of stored ways of image processing that correspond to the information used as the search condition such as the name of the at least one of a disease and injurydisease/injury, the name of the site, the name of the doctor and/or the type of the patient (Step S406). The image-processing details extraction unit 310 then extracts the selected way of image processing, i.e., the selected details of image processing (Step S407).

Please amend paragraph [0060] per the following amended paragraph.

Moreover, in a case where the search by the image-processing details extraction unit 310 finds one way of image processing (Steps S404-Y and Step S405-N), the image-processing details extraction unit 310 extracts that way of image processing, i.e., the found details of image processing that correspond to the information used as the search condition such as the name of the at least one of a disease and injurydisease/injury, the name of the site, the name of the doctor and the type of the patient, from the image-processing history storing unit 306 (Step S407). Then, the image processing unit 312 automatically performs image processing having the details that are the same as those of image processing thus extracted, for the medical image obtained by the image acquisition unit 308 from the electronic medical chart database 304 (Step S408).

Please amend paragraph [0061] per the following amended paragraph.

For example, the image processing unit 312 selects an affected area within the medical image obtained by the image acquisition unit 308 by image matching or the like using a template

image that was prepared and stored for each site in advance. The image processing unit 312 then magnifies the affected area thus selected, based on the magnifying power extracted by the image-processing details extraction unit 310. Moreover, the image processing unit 312 performs an operation related to the gray scale and an operation related to the frequency for the medical image based on the details of those operations extracted by the image-processing details extraction unit 310. In a case where the name of the at least one of a disease and injury~~disease/injury~~ is a fracture and the name of the site is an ankle, the image-processing details extraction unit 310 specify the affected area by using a template image for the ankle, determines a dynamic range so as to allow the fracture to be clearly displayed, and enhances high spatial frequency components.